

Comments
QAPP draft Worksheet #9 received on January 22, 2014
River Mile 10.9 Operations and Maintenance Plan

EPA reviewed the draft Quality Assurance Project Plan worksheet referenced above. In response, we offer the following:

1. Objectives for Performance Monitoring of the RM 10.9 Cap
 - a. Demonstrate physical stability of the cap (not under discussion here)
 - b. Demonstrate chemical stability of the cap (focus of these comments)
2. Objectives of Pore Water Monitoring
 - a. Verify the cap is performing as expected by monitoring 3 zones of the capped sediment
 - b. Determine the influence of both underlying sediment concentrations and overlying water concentrations on the cap and cap performance
 - c. Evaluate the relative difference between the 3 layers
3. Locations and Frequency of Sampling
 - a. Focus on monitoring 3 depth zones of the capped sediment:
 - i. Contaminated layer beneath cap – to determine baseline conditions
 - ii. Active carbon layer – to determine if breakthrough is occurring (1 or 2 samples)
 - iii. Within the armor stone layer – to measure the influence contamination in the water column is having on the cap
 - b. Divide the capped area into at least 4 sections, based on criteria such as
 - i. Thickness of cap placed
 - ii. Groundwater influx/upwelling
 - iii. No-dredge zone potential edge effects on capped areas flanking this zone
 - iv. Bathymetry
 - c. Select at least 5 discrete locations within each section to monitor
 - i. a minimum of at least 20 sampling locations across the cap must be monitored
 - ii. the number of locations will increase if more than 4 distinct areas are identified
 - d. Collect samples 3 times within the first 5 years – sample during the season when

the highest degree of upwelling would be expected

- e. This plan will result in the analysis of 60 to 80 samples 3 times prior to evaluation, for a total number of samples of 180 to 240

4. Parameters to Analyze

- a. Use PAHs as an indicator contaminant class at all locations
- b. Analyze at least 4 locations for dioxins and PCBs as well
 - i. to verify efficacy of using PAHs as a surrogate
 - ii. select locations based on areas with the highest underlying dioxin concentrations

5. Performance Standards

- a. Trigger location will be the upper portion (i.e., upper 1/3) of the active layer
- b. Trigger concentration should be based on modeled pore water concentrations predicted by the CapSim model
- c. Consider collecting samples from both the bottom third and upper third of the active layer to further inform results
- d. Note that the CapSim model will need to be revisited to provide concentration estimates for the years when monitoring will occur, and may need to be revisited to provide upper bound estimates.

6. Methods for Pore Water Measurement

- a. Recommend using SPME fiber-pushpoint sampler approach (modified Henry sampler)
- b. Can penetrate through all 3 layers and analyze fibers at appropriate intervals
- c. Placement techniques for the SPMEs can be achieved through engineering
- d. Verify with labs that appropriate detection limits can be achieved